88 01810

April 1982

SUMMARY

DRAFT
Environmental Impact Report on SCAG 82 Growth Forecast Policy

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

scag

This report was prepared in conformance with the California Environmental Quality Act (CEQA) and the CEQA Guidelines, as amended.

The report was financed through a combination of grants from the U.S. Departments of Transportation and Housing and Urban Development.

88 01810

INSTITUTE OF GOVERNMENTAL
STUDIES LIBRARY

JUN 7 1982

UNIVERSITY OF CALIFORNIA

EXECUTIVE SUMMARY OF DRAFT ENVIRONMENTAL IMPACT REPORT

On

DRAFT SCAG-82 GROWTH FORECAST POLICY

April, 1982

Environmental Analysis Program

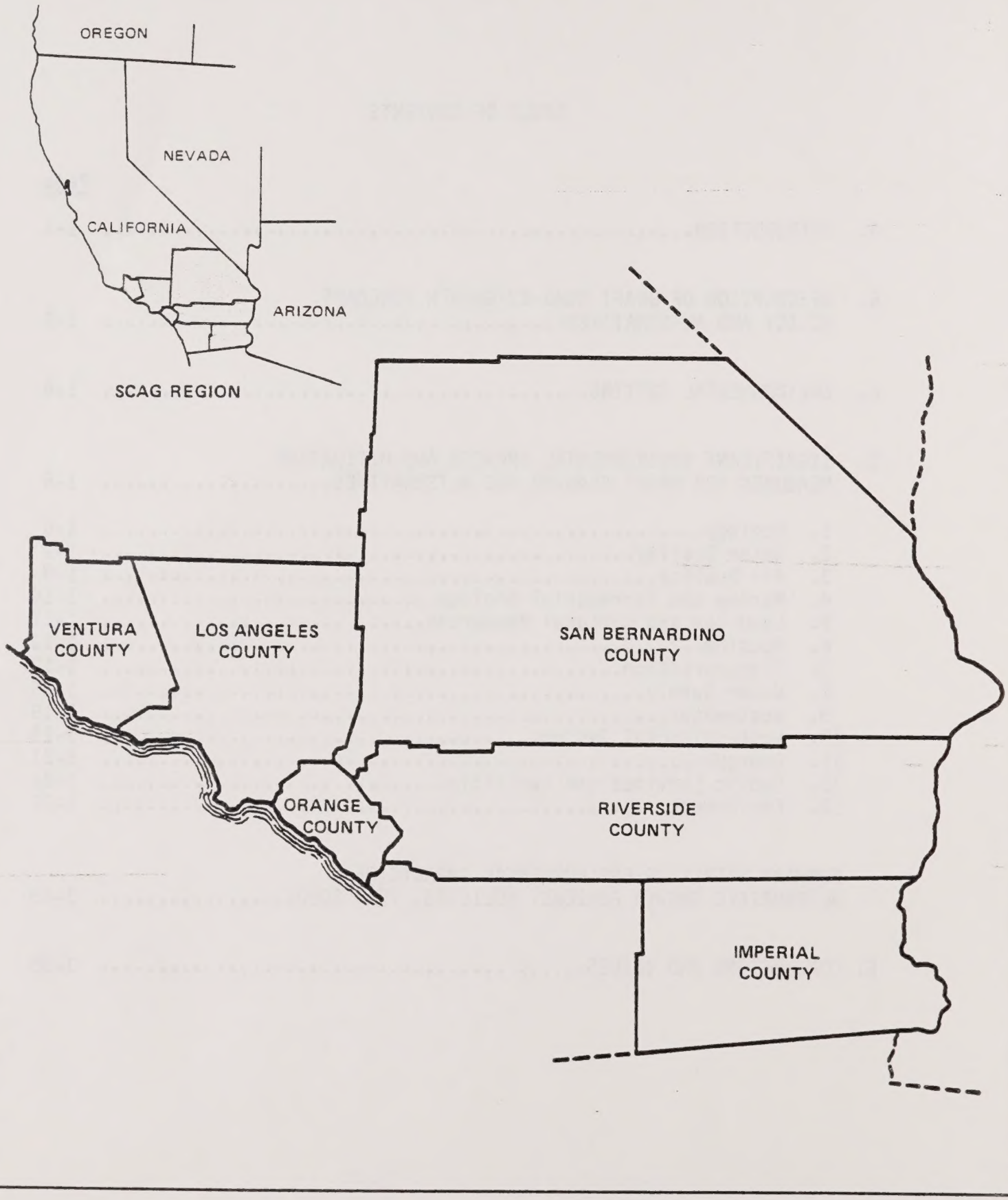
Southern California Association of Governments
600 South Commonwealth Avenue - Suite 1000
Los Angeles, California 90005
(213) 385-1000

Digitized by the Internet Archive
in 2024

https://archive.org/details/c124896936

TABLE OF CONTENTS

	Page
A. INTRODUCTION	1-1
B. DESCRIPTION OF DRAFT SCAG-82 GROWTH FORECAST POLICY AND ALTERNATIVES	1-2
C. ENVIRONMENTAL SETTING	1-5
D. SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES FOR DRAFT SCAG-82 AND ALTERNATIVES	1-5
1. Geology	1-6
2. Water Quality	1-7
3. Air Quality	1-8
4. Marine and Terrestrial Biology	1-10
5. Land Use and Cultural Resources	1-11
6. Housing	1-13
7. Transportation	1-15
8. Water Supply	1-16
9. Wastewater	1-18
10. Waste Disposal Systems	1-19
11. Energy	1-21
12. Public Services and Facilities	1-24
13. Employment	1-27
SUMMARY MATRIX OF ENVIRONMENTAL IMPACTS OF ALTERNATIVE GROWTH FORECAST POLICIES, YEAR 2000	1-29
E. CONCLUSIONS AND ISSUES	1-35



SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
REGIONAL PLANNING AREA

CHAPTER 1

EXECUTIVE SUMMARY

A. INTRODUCTION

The two alternative growth forecast policies currently under consideration by SCAG -- Draft SCAG-82A and Draft SCAG-82B -- include significantly higher levels of regional growth over what exists in the agency's currently adopted forecast -- SCAG-78. Specifically, both alternatives show a regional population total of 14.9 million persons in the year 2000, as compared to 13.6 million person under SCAG-78.[1] With identical regional totals, Draft SCAG-82A and 82B differ in the way population is distributed throughout the region.

1. Purpose of the Draft EIR

The significant differences between both versions of Draft SCAG-82 and the currently adopted forecast compel a thorough examination of the environmental impacts of a higher growth forecast, as well as the differences between the impacts of the alternative distributions of 82A and 82B. The purpose of the Draft EIR on SCAG-82 and this Executive Summary is twofold:

1) To identify and clarify the environmental consequences of adopting a higher forecast, so that decision-makers and the public will have full knowledge of potential significant environmental impacts (negative and positive), and how these impacts might be mitigated.

2) To provide information that will aid in selecting either SCAG-82A or SCAG 82B, or in modifying these forecasts to a different distribution, a different target year, or a different regional total which is between SCAG-82 and SCAG-78 or even lower or higher.

Due to the importance and complexity of issues raised by the proposed forecast, this document and the accompanying SCAG-82 report are being widely circulated, and public comments are being solicited. Based on comments received, as well as any new information which may become available, SCAG's technical and policy committees will develop recommendations for action by the SCAG Executive Committee on a new growth forecast policy.

2. General Approach of the Draft EIR

Draft SCAG-82A and 82B are at the high end of the likely population range expected by the year 2000, whereas SCAG-78 is at the low end of this range. In addition to analyzing the significant impacts of the SCAG-82 forecasts, the EIR analyzes in similar detail the impacts

---

[1]Current (January 1, 1980) regional population is 11.5 million persons.

associated with SCAG-78 (and another slightly higher forecast -- SCAG-78A). This approach thus "brackets" the range of environmental impacts that may result from any alternative within the range that ultimately may be adopted as SCAG-82.

All four growth forecasts are analyzed in terms of environmental impacts that would result between 1979 or 1980 and the year 2000 in the following 13 categories:

Biophysical	Socioeconomic
Geology	Land Use and Cultural Resources
Water Quality	Housing
Air Quality	Transportation
Marine and Terrestrial Biology	Water Supply
	Wastewater
	Waste Disposal
	Energy
	Public Services and Facilities
	Employment

3. Contents of the Full Draft EIR

The full draft EIR provides substantially more detail than is presented in this summary. In particular, 13 chapters, corresponding to the 13 subject areas identified above, provide detailed impact information on SCAG-82A and 82B and the alternatives, along with recommended mitigation measures and detailed descriptions of existing environmental conditions. Those chapters identify subregional impacts which are only touched on lightly in this summary.

B. DESCRIPTION OF DRAFT SCAG-82 GROWTH FORECAST POLICY AND ALTERNATIVES

1. Draft SCAG-82A and 82B

The two alternative growth forecast policies, SCAG-82A and 82B, are based on a regional population total of 14.9 million persons in the year 2000. This growth represents an increase of 3.4 million people (29%) over the 1980 level. The two alternatives are discussed below in terms of population, housing, employment, and land use. Increases in population by county shown in Table 1-1.

a. Population

Both SCAG-82A and SCAG-82B call for most of the region's growth (71% in SCAG-82A and 63% in SCAG-82B) to occur in outlying areas, particularly in the eastern portion of the coastal plain where there is

plenty of vacant, relatively inexpensive land. At the same time, continued in-fill and recycling is forecast for north Orange County and central Los Angeles County.

One major difference between the two forecasts is that SCAG-82A directs 25% of the region's growth to all 64 centers of the region, while SCAG-82B directs 34% of growth primarily to 14 large centers of the region and to the "Regional Core," an area extending from downtown Los Angeles to Santa Monica.

Both forecasts would have substantial growth in the currently urbanizing subregions of the region (such as southeast Orange County and the Chino Basin) and in portions of the desert; these subregions are forecast to grow by approximately 81% under SCAG-82A and 72% under SCAG-82B over 1980 levels. Growth in the mountain/desert subregions would be identical under both forecasts.

The highly urbanized subregions would increase in population by 11% over 1980 levels in SCAG-82A and 14% in SCAG-82B. While this is a lower rate of growth than would occur in the urbanizing and mountain and desert subregions, these still represent sizeable increases since the baseline population in these areas is already high.

Table 1-1

POPULATION BY COUNTY, DRAFT SCAG-82A AND 82B, AND PROJECT ALTERNATIVES

County	1980	SCAG-82A	SCAG-82B	SCAG-78	SCAG-78A
Imperial	91,500	136,000	136,000	129,000	129,000
Los Angeles	7,462,000	8,503,000	8,690,000	7,789,000	7,879,000
Orange	1,920,700	2,769,000	2,759,000	2,758,000	2,718,000
Riverside	655,900	1,210,000	1,130,000	956,000	1,026,000
San Bernardino	822,500	1,483,000	1,386,000	1,196,000	1,320,000
Ventura	524,800	821,000	821,000	792,000	811,000
Regional Total	11,537,400	14,922,000	14,922,000	13,620,000	13,883,000

b. Housing

Both SCAG-82A and SCAG-82B show a year 2000 housing total of 5.9 million units, a net increase of 1,513,900 units. This represents a 34% increase over 1980 levels, and an average net increase of 76,000 housing units per year.

Under SCAG-82A, 55% of the net increase in housing units is forecast to be multi-family units. Almost one-fourth of the net increase is forecast to occur on recycled land, with the remaining 76% on currently vacant land.

More multi-family units would be constructed under SCAG-82B than 82A; 60% of the net increase in housing units would be multi-family. Recycle rates would be higher in 82B than 82A, particularly within the Regional Core and the largest centers of the region. The densities of new construction in this alternative would be considerably higher than SCAG-82A in existing large, urban centers, but slightly lower in some newly urbanizing areas in San Bernardino, Riverside, and Orange Counties.

c. Employment

Both SCAG-82A and SCAG-82B show a regional total of 7.9 million employees in the year 2000, representing a 41% increase over the 1980 level.

Both SCAG-82A and SCAG-82B attempt to balance jobs with population, with the currently job-poor areas of Ventura, San Bernardino, and Riverside Counties capturing a larger share of the region's employment growth than indicated by current trends. Los Angeles County, on the other hand, would capture a smaller share than current trends indicate. For Orange and Imperial Counties, the forecast is roughly consistent with current trends.

d. Land Use

SCAG-82A would develop more currently vacant and agricultural land than 82B, while 82B would result in greater levels of recycle and higher densities in already urbanized areas. Under SCAG-82A, 364,000 acres of currently vacant land would be developed for use by urban activities and 337,000 acres of currently vacant land would be urbanized under SCAG-82B.

2. Project Alternatives

The two project alternatives, SCAG-78 and SCAG-78A, are briefly described below. SCAG-78, as the currently adopted forecast, is the no-project alternative and forms the low end of the range of impacts that are discussed in the EIR.

a. SCAG-78

The SCAG-78 growth forecast policy is based on a year 2000 regional population total of 13.6 million persons, 1.3 million lower than Draft SCAG-82. This forecast encourages growth in existing urban areas and areas adjacent to urban areas, and was based on trends up to 1978 in population, housing, and employment growth.

As shown in Table I-1, Orange County would receive the largest increase in growth (837,000) under this forecast, with Los Angeles, San Bernardino, Riverside, and Ventura Counties each receiving about 300,000 additional persons. Housing would increase by 1,060,200 dwelling units between 1980 and 2000 under this forecast, and total employment would rise 20.3% to 6.7 million jobs. About 250,000 acres of available vacant land would be converted to urban uses.

b. SCAG-78A

SCAG-78A forecasts a regional total of 13.9 million persons in the year 2000, 300,000 higher than SCAG-78 and 1 million lower than Draft SCAG-82. While SCAG-78A was not adopted by SCAG's Executive Committee, it was authorized as an alternative for modelling and analysis purposes. This forecast allocates larger amounts of growth to Los Angeles, San Bernandino, and Riverside Counties, and slightly less to Orange County than SCAG-78; county totals are shown in Table I-1. Housing would increase by 1,132,200 dwelling units between 1980 and 2000; employment would rise 28% to 7.1 million, with a proportionately larger increase in Los Angeles County. About 255,000 acres of available vacant land would be converted to urban uses.

C. ENVIRONMENTAL SETTING

The SCAG region is a very complex entity, composed of six counties -- Ventura, Los Angeles, Orange, San Bernardino, Riverside, and Imperial -- and over 150 cities. In 1980, about 11.5 million people inhabited the region's 38,500 square miles.

The economic growth and development activity which have occurred as the population has grown to its present size have already resulted in significant environmental impacts on the region. For example, existing environmental problems include high levels of air pollution; significant threats to life and property from landslides, earthquakes, and other geologic hazards; and a large number of plant and animal species threatened with extinction. Socioeconomic problems include a significant housing shortage, and serious concerns about transportation and waste disposal.

Nevertheless, the region has a strong and varied economy; great cultural diversity; vast and generally well-balanced infrastructure systems in transportation, water supply, wastewater treatment, and energy production and delivery; and great variety in natural environment and climatic conditions.

D. SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES FOR DRAFT SCAG-82 AND ALTERNATIVES. (Note Summary Table at the end of this section on Pages 1-29 to 1-34.)

In this section, the impacts and corresponding mitigation measures for SCAG-82A and 82B, and SCAG-78 and 78A, are summarized on a chapter-by-chapter basis in the order of their presentation in Part Three of the full EIR. The level of analysis in this summary is primarily regional in scale and is based on the population, housing, employment, and land use projections of the growth forecasts. The full DEIR also addresses county, subregional and local impacts.

At the end of this section, a summary table is provided that lists the impacts of the four growth scenarios.

1. Geology

Impacts of SCAG-82A and 82B

Population growth at the levels forecast in SCAG-82A and 82B would tend to increase the potential for damage from seismic events, flooding, and landslides, and cause greater rates of hillside and beach erosion. Most of these potential impacts would be related to residential construction. Exposure to seismic ground-shaking could occur anywhere in the region, depending on the magnitude of the earthquake and location of its epicenter.

There would be differences between SCAG-82A and 82B in the type and location of potential geologic impacts. SCAG-82A would have a more dispersed pattern of development than SCAG-82B, which would result in a higher potential for flooding in outlying counties, as well as potential for increased hillside development and resulting erosion. SCAG-82B, on the other hand, would concentrate more growth in the urbanized portions of the region. This would mean lower impacts in the outlying urbanizing areas than SCAG-82A, but more flooding and hillside erosion potential in urbanized areas. Due to lack of large amounts of vacant land, added growth in urbanized areas would tend to place added pressure on hillside development.

Seismic risks could be greater with the more concentrated growth pattern forecast in SCAG-82B, due to higher density development patterns and additional high-rise construction; the potential for damage could be partially offset, however, by the greater likelihood of pre-1933 buildings being demolished under SCAG-82B since more recycling is involved in this forecast.

Both SCAG-82A and 82B include policies that would preserve vacant land with low suitability for development, such as areas with steep slopes or fire, flood, or seismic hazards.

Impacts of SCAG-78 and 78A

Under SCAG-78 and 78A, there would be a lower increase in the potential for geologic impacts than in SCAG-82A and 82B. The primary impacts of SCAG-78 would be in the urbanized portions of the region, which could experience a greater risk of flooding and hillside and beach erosion than currently exists. Seismic hazard would be general throughout the region. Geologic impacts would tend to be somewhat higher in the outlying areas with SCAG-78A than with SCAG-78, but the impacts would be about the same in the central urbanized area under both forecasts. This could mean a slightly higher potential for damage due to seismic hazards in sensitive areas like the Chino Basin.

Mitigation Measures

Impacts could be reduced or avoided by following sound engineering practices, enforcing existing building and grading codes and other

regulations, and by directing development away from particularly hazardous areas.

2. Water Quality

Impacts of SCAG-82A and 82B

For both alternatives, large population increases and associated development could result in the degradation of surface water and groundwater quality throughout much of the region. This degradation would result from the increased discharge of industrial and municipal wastewater; increased urban runoff pollution; construction site runoff; and releases from failed septic tank and leachfield systems and from deficient waste disposal sites. Groundwater may also be adversely affected by infiltration of increased urban irrigation flows and by mismanagement of increased pumping and recharge leading to such problems as seawater intrusion.

These impacts would be greatest in the Upper Santa Ana River Basin under SCAG-82A, and may be exacerbated by a large shortfall in projected municipal wastewater treatment capacity, which could lead to discharge of poorly treated effluents by municipalities and industrial sources and more use of small, private treatment systems. SCAG-82B would feature less severe impacts in the Upper Santa Ana River Basin area but somewhat greater impacts in the Los Angeles River Basin area. For most of the remaining areas of the SCAG region, impacts would be similar for both SCAG-82 alternatives. Under both forecasts, the projected shortfall of waste disposal sites could represent a severe threat to water quality because of the potential for illegal dumping or storage of hazardous materials.

With respect to marine water quality, both alternatives would probably result in increased industrial and municipal wastewater discharges, and increased pollution from storm drain and stream runoff. This input of pollutants to marine water could result, depending on levels of control achieved, in localized areas of turbidity, sedimentation, reduced oxygen levels, plankton blooms, and elevated levels of toxic substances such as pesticides and lead. Enclosed bays and estuaries would be most affected. With both forecasts, various locations scattered along the entire coast of the SCAG region could be degraded; SCAG-82B would result in greater impacts along the Los Angeles County coast.

Impacts of SCAG-78 and 78A

SCAG-78 would result in substantially lower impacts to surface water and groundwater quality in the Upper Santa Ana River Basin area, the Upper Santa Clara River Basin area, the San Jacinto River Basin area, the Malibu Creek area, and in the Antelope Valley and along the Mojave River.

SCAG-78A impacts would be very similar to those for SCAG-78, except for the Upper Santa Ana River Basin area, where impacts would be substantially greater and about the same as those for SCAG-82B.

Impacts to marine water quality would be similar for the Ventura and Orange County coastal waters under all the SCAG-78 and 82 alternatives, but substantially lower for the coastal waters of Los Angeles County, under the SCAG-78 forecasts.

Mitigation Measures

Assorted mitigation measures include the linking of the phasing of development with the phasing of new sewerage and sewage treatment systems. In addition, the ongoing regulatory activities of the State Water Resources Control Board and the Regional Water Quality Control Boards in the SCAG region, in conjunction with local planning and regulation, should serve to prevent or reduce many water quality impacts. Additional measures include effective implementation of coastal zone management programs, groundwater supply management, and numerous measures in SCAG's 208 Areawide Waste Treatment Management Plan for control of nonpoint source pollution, such as implementation and enforcement of grading and erosion control ordinances, and increased stormwater management measures.

3. Air Quality

Impacts of SCAG-82A and 82B

Although the region's future air quality would be better than present, the growth forecasted by SCAG-82A and 82B would contribute to a probable continued inability to meet federal air quality standards for ozone, carbon monoxide, and particulates in various areas of the region.

The potential impacts of SCAG-82A and 82B on regional air quality were assessed by forecasting the emissions in the year 2000 of reactive organic gases (ROG), nitrogen oxides (NOX), carbon monoxide (CO), sulfur oxides (SOX), and particulates and comparing these forecast emissions with emission levels necessary to attain federal air quality standards.[2]

The results of the analysis for the South Coast Air Basin (SCAB) are shown in the Summary Table. (The South Coast Air Basin consists of the non-desert portions of the SCAG region and excludes Ventura County). In general, emissions would be less than those experienced today because of the continued implementation of existing regulatory control measures, but probably still too large to meet federal air quality standards, except for nitrogen dioxide and sulfur dioxide.

---

[2]ROG and NOX levels are primary determinants of ozone levels.

Both forecasts would result in nearly the same amount of total emissions in the Basin, although the distribution of emissions would differ slightly throughout the region. Emissions from SCAG-82B could be somewhat lower than indicated in; the Summary Table, since the analysis did not account for as expanded a transit system as could be facilitated by the growth patterns in 82B.

In Ventura County, which is in a separate air basin, nitrogen oxides and reactive organic gas emissions would decrease by the year 2000 under both forecasts, but still would not reach allowable levels for meeting ozone air quality standards. Thus ozone would continue to be a problem in this county. In the Southeast Desert Air Basin (SEDAB), where ozone is a problem, increased nitrogen oxides and reactive organic gas emissions relative to current levels are forecast for the year 2000 under the SCAG-82 alternatives. Because of these increased emissions and transport of pollutants from the SCAB, ozone levels are expected to continue to exceed air quality standards in many areas of this basin.

Impacts of SCAG-78 and 78A

The growth forecasted by SCAG-78 and 78A could also contribute to the continued inability to meet air quality standards for the same pollutants in the South Coast Air Basin as for for SCAG-82 and 82B, even though forecasted emissions would be substantially lower than for SCAG-82 (see the Summary Table).

For Ventura County, nitrogen oxides and organic gas emissions still might not be low enough to meet ozone air quality standards, even with the continued application of existing control measures. In many parts of the SEDAB, even though forecasted emissions of nitrogen oxides and reactive organic gas would be lower than under SCAG-82, air quality standards for ozone would not likely be attained under SCAG-78 or 78A by the year 2000.

Mitigation Measures

The Air Quality Management Plans (AQMPs) of 1979 for the SCAB, Ventura County, and the Southeast Desert Basin used SCAG-78 projections as a basis for developing adequate control measures to attain federal air standards. The current assessment is that the required emission reductions for the SCAG region cannot be accomplished with those identified mitigation measures.

As part of the work of preparing the 1982 AQMP revisions, several control measures which were deemed technically or economically impractical in 1979 are being reevaluated. In addition, new measures are being developed to provide further air pollution mitigation. At this time, preliminary analyses indicate that all reasonable and feasible measures identified in the draft 1982 AQMP for the SCAB probably would be insufficient to reduce emissions to a level which would enable air quality standards (except for nitrogen dioxide and sulfur dioxide) to be met under the higher SCAG-82 forecasts.

4. Marine and Terrestrial Biology

Impacts of SCAG-82A and 82B

The biological impacts of SCAG-82A and 82B consist of potentially serious adverse effects on both marine and terrestrial biota. The projected population increase would result in an increase in the marine discharge of wastewater from industrial and municipal point sources which could result in additional localized community changes, toxic effects, and bioaccumulation of toxic materials due to discharges of nutrients, toxic metals, and organic substances, depending on levels of pollution control. Similar additional impacts on the biota of bays and estuaries can be expected because of increased and potentially uncontrolled polluted storm drain and stream runoff. Marine biota and their habitats also may be adversely affected by increased coastal development and recreational activity. The marine biology impacts of SCAG-82B would probably be somewhat worse, especially along the Los Angeles County coast, because of its greater emphasis on growth in the Los Angeles coastal plain and central Los Angeles Basin area.

The impacts of SCAG-82A and 82B on terrestrial biota include the direct destruction or isolation of plant and animal habitats due to development activities. Both alternatives would involve the loss of considerable amounts of habitat, especially in southern Ventura County, the Antelope and Santa Clarita Valleys, the Chino Basin-East San Bernardino Valley area, southern and eastern Orange County, western Riverside County, the Coachella Valley, and the Victorville-Barstow area. SCAG-82B would result in substantially less habitat loss for the Chino Basin-East San Bernardino Valley area and Riverside-Corona area, but slightly greater habitat loss or degradation in the Los Angeles Basin and associated coastal areas.

Both SCAG-82 alternatives would probably result in substantial increases in recreational activity and the associated disturbance and destruction of habitat in the mountain and desert areas of the region. Impacts could be more severe for SCAG-82A because more growth is directed to interior regions close to the mountain and desert areas. Both forecasts represent the potential for severe threat to many rare and endangered species and significant ecological areas, depending on specific locations of development and patterns of recreational use, as well as the level of local, state and federal regulation. Of particular concern would be the continued survival of California Condor in Ventura County, the Coachella Fringe-Toed Lizard of the Coachella Valley, and Stephen's Kangaroo Rat of the San Jacinto Valley.

Impacts of SCAG-78 and 78A

Impacts on the marine biota of the Ventura and Orange County coastal waters would be very similar to those resulting from the SCAG-82 alternatives. However, there would be a substantially lower impact on the biota of the Los Angeles County coastal waters largely because of much lower polluted runoff and municipal sewage effluent discharge.

SCAG-78 and 78A would involve similar impacts to terrestrial biota as for the SCAG-82 alternatives in southern Ventura County, Orange County and the Coachella Valley, but substantially lower impacts in the Antelope and Santa Clarita Valleys, western Riverside County and the Victorville-Barstow area. SCAG-78 would also result in substantially lower impacts in the Chino Basin-San Bernardino-Riverside areas, whereas, for SCAG-78A, impacts to these areas would be similar to those of SCAG-82B. In comparison with the SCAG-82 alternatives, both SCAG-78 alternatives would represent similar levels of threat to the California Condor and the Coachella Fringe-Toed Lizard, but a substantially reduced threat to the Stephen's Kangaroo Rat.

Mitigation Measures

Encouragement of compact and concentrated growth is a SCAG-82 policy and such growth can be directed away from sensitive areas. Consistent use of project level mitigation as enforced by local, state and federal governments will also be essential.

Additional mitigation measures include the continued and further preservation of open space and biotic resources as identified in local plans and as outlined in SCAG's Conservation and Open Space Plan, and through coastal zone planning and management.

The planning and management of activities of such government agencies as the U.S. Forest Service (Los Padres, Angeles and Cleveland National Forest), National Park Service and U.S. Bureau of Land Management (California Desert Conservation Area) will be important for the protection of biotic resources in the mountain and desert regions. Federal and state wildlife and endangered species protection programs will also be important to prevent severe impacts on species and habitats.

Finally, continued and expanded monitoring is needed to continually assess and reappraise the status of plant and animal populations and communities in the region.

5. Land Use and Cultural Resources

Impacts of SCAG-82A and 82B

Land use changes for the SCAG region under SCAG-82A and 82B would include the intensification of land use density of existing urban areas, particularly in SCAG-82B, and the conversion of existing, vacant agricultural or undeveloped areas for new urban development, which would be slightly more pronounced under SCAG-82A growth patterns. These land use changes would have mixed effects: under SCAG-82A, the expansion of urban development would increase the feeling of "sprawl" that already characterizes portions of the region; whereas, under SCAG-82B, increased urban density in the central core of the region would de-emphasize sprawl somewhat. Both forecasts assume as

policy that vacant land with low suitability for development, such as steep slopes or high fire, flood, or seismic hazards and preserved areas identified in locally adopted plans as natural resource and open space areas, would not be developed.

Development of 364,000 acres of currently vacant land would be expected between 1979 and 2000 under Draft SCAG-82A, an increase in urban acres of 29.9% over 1979. This is somewhat lower than would occur given recent trends, and reflects policies calling for increased densities and concentration of growth in existing urban centers. Total urban land would thus increase from 4.9% of the region's total land area to 6.4%. Altogether, a net loss of 16,000 acres of agricultural land is forcast as a result of conversion to urban uses, representing 1.4% of all agricultural land.

Under Draft SCAG-82B, a 27.6% increase in urban land area would take place betwen 1979 and 2000. Growth and land use change would occur most intensively within existing urbanized areas. Fewer acres of currently vacant and agricultural land would be urbanized under SCAG-82B than SCAG-82A (337,000 vs. 364,000). This is due to the smaller amount of growth forecasted in newly developing areas and the greater extent of recycling of currently urbanized land to higher densities in the regional core and large centers. SCAG-82B would also involve less net loss of agricultural land than 82A (13,000 acres vs. 16,000 acres).

Because potential archaeological and historical resource impacts are highly site-specific, it is not possible to provide a quantitative assessment of the impacts of Draft SCAG-82A and 82B on cultural resources; however, it is somewhat likely that a larger number of undiscovered archaeological sites would be encountered in development following SCAG-82A patterns than in SCAG-82B. It is assumed that existing local, state and federal laws and protection requirements would provide ample protection and mitigation of potential impacts before development or conversion of vacant land would be allowed.

Impacts of SCAG-78 and 78A

Despite less population growth, SCAG-78 would likewise involve extensive conversion of available vacant land to urban uses -- about 250,000 acres. There is proportionately greater conversion of land as compared to SCAG-82 forecasts, because overall densities would be lower. A population 1.9% greater than that forecast for SCAG-78 is assumed to create a proportional increase in land use change and impacts, with 255,000 additional acres urbanized between 1979 and 2000 for SCAG-78A.

Mitigation Measures

Mitigation measures for reducing the land use impacts of the growth forecasts would need to focus on limitations on the loss or conversion to urban uses of existing open, vacant, undisturbed or agricultural lands. Although several methods of mitigation consistent with general SCAG land use policies are possible, each creates its own chain of resultant effects on other policies or aspects of the growth forecast. Measures include:

- Encouraging higher levels of urban area recycling.
- Encouraging even higher density and greater intensity for existing uses, particularly within urbanizing areas currently undergoing development.
- Encouraging compact growth patterns and urban in-filling before expansion to rural or outlying urbanizing areas is allowed.
- Requiring strict adherence to all existing land use policies and regulations (e.g., local conservation and open space plans, zoning, agricultural preserve contracts, etc.).

6. Housing

Impacts of SCAG-82A and 82B

Both forecasts assume that sufficient housing will be constructed to house increased population. However, record high housing prices and mortgage rates currently are depressing market activity, and production rates are seriously lagging. If these trends continue, the result could be less population growth than forecast, or more persons per household. Moreover, should a production shortfall continue, rents and housing prices would increase further, having their greatest impact on low- and moderate-income households. Other impacts could include reduced housing mobility among resident population, relocation of households outside of the region, reduced in-migration, and ultimately less population than forecast.

If the housing production forecasts of SCAG-82A and 82B are achieved, impacts associated with recycling and increased densities would result. Recycling involves the removal of existing units from the inventory due to demolition, and conversion from low to higher residential densities. Draft SCAG-82A forecasts demolition of 57,000 units, or 1.3% of the 1980 housing stock, while 82B forecasts demolition of 72,000 units, or 1.6% of the 1980 stock. In both forecasts, nearly 80% of recycling would occur in Los Angeles County, and 15% in Orange County. However, more recycling would occur in 82B, with its most concentrated effects on core areas of Los Angeles County.

The major impact associated with recycling will be displacement of resident households, particularly low income households. Rehousing this segment of the population could be difficult, given current and potential shortfalls of affordable housing in the region. Serious disruption of family and social ties could also result. However, recycled land also will result in net additions to the housing inventory, thus widening choice and mobility prospects for middle and upper income households.

Since 1970, residential density has been increasing, reflecting greater multi-family unit construction, residential recycling, and development on smaller lots. SCAG-82A results in new development at 6.9 average dwelling units (d.u.'s) per residential acre; SCAG-82B is slightly higher (9%) at 7.5 average d.u.'s per acre, while existing density is 5.8 d.u.'s per acre. SCAG-82B will also require less undeveloped land for housing, and will allow for more economies-of-scale associated with higher density residential environments.

Both SCAG-82A and 82B forecast a decline in household size from 2.60 persons to 2.51 persons. Shrinking household size usually increases housing demand. Therefore, as the region enters the forecast period with a housing shortage, continuation of the trend toward smaller households, by increasing demand, could further increase housing costs.

Impacts of SCAG-78 and 78A

The issue of whether sufficient housing could be produced to accommodate forecast population applies to these forecasts as well, although the issue is less critical because 25 - 30% fewer housing units would be needed by the year 2000, as compared to SCAG-82. The amount of demolition-displacement-recycling would be less, although estimates previously prepared for SCAG-78 indicate the quantities would be more than SCAG-82 (due to differing methodologies).

SCAG-78 and 78A would have the most severe impact of all alternatives on decreases in household size; persons per dwelling unit would decline from 2.6 in 1980 to 2.48 in the year 2000.

Mitigation Measures

Housing Production--Incentives are needed to encourage greater production of housing. SCAG has recently published "Methods to Increase Housing Supply" which comprehensively describes 54 ways to increase production or lower the cost of housing. Measures include financing alternatives, building production methods, conversion and reuse alternatives, in addition to more creative use of governments' regulatory function. Supplementing these tools are the Section 8 Rental Assistance Program and programs sponsored by the California Housing Finance Agency.

Demolition and Recycling--The disruptive effect of household displacement cannot be mitigated completely. However, where federal or state funded projects create displacement, benefits in the form of dollars and administrative assistance can help mitigate effects. Where privately funded projects create the displacement, locally developed requirements could be applied, as appropriate, patterned after federal and state law to provide some mitigation.

Densities--Impacts resulting from an increase in housing densities could probably be most effectively mitigated through the local General Plan process. Small area plans can be especially important in this context.

Household Size--Two approaches to mitigating the impact of decreasing household size (and its resulting implications for more housing supply) are to allow design of single family residences to be occupied by more than one household, and allow development of "Granny Flats" or other incentives to make use of unused housing capacity.

7. Transportation

Impacts of SCAG-82A and 82B

The traffic resulting from these two forecasts during peak periods of the day would nearly double the current congestion (as measured at sample locations) on the regional freeway and major street system. The worst congestion, as today, would occur in Los Angeles and Orange Counties. In Riverside, San Bernardino, and Ventura counties, congestion would occur in some local areas, but for the freeway and major street system as a whole, sufficient capacity exists to accommodate forecasted demand.

For the region the congestion that existed on 27% of the freeways and major highways in 1979 would grow in the year 2000 to nearly 50%. The daily congestion experienced by travelers going to work (18% of the total trips) would be a combination of "stop-and-go" and "full stop" traffic. Between the two forecasts, more severe congestion would occur under 82B due to the higher densities concentrated in a few centers, a majority of which are in Los Angeles and Orange Counties.

Under both forecasts, total person trips each day for the region would grow 37%, which is faster than population growth (29%) but slower than employment growth (41%). Of the total daily trips, less than 4% would be on transit (1.6 million), a little more than the 3% in 1979. The growth of transit trips, however, would be substantial, with 82B (51%) growing faster than 82A (40%). The more substantial growth under 82B is due to the higher densities in centers and corridors close to transit service. SCAG-82B would be likely to create a demand for major, grade-separated transit improvements beyond those used in the analysis for the Draft EIR. Such improvements, coupled with more walking, could reduce congestion significantly under SCAG-82B.

Impacts of SCAG-78 and 78A

Congestion would be less under SCAG-78 (39%) and 78A (40%) than under 82A and 82B but still substantial. Total person trips would increase under SCAG-78 by 30% and under SCAG-78A by 32%. Transit trips would grow 41%, but still be only 3% of total daily person trips.

Mitigation Measures

Some of the major measures contained in the 1980 Regional Transportation Plan (RTP) are:

- Metro rail from downtown Los Angeles City to the San Fernando Valley;
- Century Freeway (I-105) from the Los Angeles International Airport to the San Gabriel River Freeway (I-605);
- Increased local transit service and increased freeway transit service on the Harbor, Santa Ana, and San Bernardino Freeways;
- Completion of gaps in the freeway system, and highway widening;
- Transportation system management such as signal synchronization on streets and ramp control on freeways;
- Rideshare programs through private and public employers;

The measures identified in the 1980 RTP would fall short of relieving the congestion under all forecasts. Moreover, the revenue needed to fund the measures would be short by $9.2 billion of the total estimated cost of $30 billion (1980 dollars).

The 1982 Draft Regional Transportation Plan is scheduled for release in early summer 1982. It will further address transportation issues and proposed solutions to those issues. However, the congestion forecasted under the four alternatives is unlikely to be mitigated unless reasonable as well as extraordinary measures and funding proposals are implemented.

8. Water Supply

a. Impacts of SCAG-82A and 82B

Municipal and industrial water demand would increase significantly, by 30.6% between 1980 and 2000 under SCAG-82A, and by 30.2% under SCAG-82B, assuming current rates of consumption. Water consumption would be slightly higher under 82A, as there would be more population in the outlying arid areas where per capita consumption is higher.

Both forecasts would involve a slight decline in agricultural water demand, 0.5% less in SCAG-82A and 0.4% less in SCAG-82B; however, agriculture would continue to consume more than half of the water used in the region.

There is a potential for shortages in water supply to the SCAG region during dry years between 1985 and 2000, but this potential is related as much to changes in water supply entitlements and decisions as to levels of population growth. The major issue yet to be resolved is whether the Peripheral Canal will be approved and constructed, completing the State Water Project and bringing to Southern California its full entitlement of water from the Sacramento Delta.

Construction of the Peripheral Canal, which will be approved or disapproved by the voters of California in June 1982, is a very controversial issue, and there are many opinions on whether it is in fact needed to supply Southern California's water needs. Some environmentalists argue that the supplies can be made up through conservation, and use of excess Colorado River water. The State Department of Water Resources (DWR) and the Metropolitan Water District of Southern California (MWD) consider the canal the best long-term solution for assuring adequate supplies. A recent study (based on population levels essentially the same as the SCAG-82 forecasts) of water supply and demand in the MWD service area, the Orange and Los Angeles Counties Water Reuse Study, concluded that, without the Peripheral Canal, "water supplies...will not dependably meet water needs.... There is a reasonable possibility that supplies will be adequate; there is a greater reasonable possibility they will not be."

Without the Peripheral Canal, water supplies to the MWD service area may not be adequate through the year 2000. Projected shortfalls could range from 335,000 AFY (years of normal rainfall) to 666,000 AFY (dry years) in the MWD service area (including San Diego County Water Authority) in the year 2000 with the population level forecast in SCAG-82A and 82B. If the Peripheral Canal is approved, water shortages could still occur in the urbanized portion of the SCAG region during dry years between 1985 and completion of the canal in the early 1990's; if it is not approved, the potential for shortages during both dry years and years of normal rainfall would continue beyond the 1990's. If shortages occur, agricultural supplies would likely be reduced and urban users asked to conserve.

If the Peripheral Canal is approved and the State Water Project is completed by 1993, water supplies to Southern California would probably be adequate during years of normal rainfall from 1993 through 2000, except in Ventura County. Assuming overdraft of groundwater resources is discontinued, shortages could occur in Ventura County under SCAG-82A and 82B after 1985 due to population growth and limitations on the County's ability to import water from the State Water Project.

The Antelope Valley and other direct importers of State Project water in the desert and the eastern Los Angeles Basin and San Bernardino Valley would not receive their full entitlements if the Peripheral

Canal is not built and could suffer shortages under SCAG-82A and 82B. The Imperial and Coachella Valleys, which have first priority for Colorado River water in California (i.e., over MWD), would probably have an adequate water supply through the year 2000.

Adoption of water conservation measures and water supply planning practices such as wastewater reclamation and storage of excess water in groundwater basins could alleviate somewhat whatever water supply shortages occur during the next 20 years in Southern California.

Impacts of SCAG-78 and 78A

Water needs would be lower under SCAG-78 and 78A, and there would be a greater probability of supplies being adequate in years of normal rainfall if the Peripheral Canal is not built. Projected shortfalls within the SCAG region could range from 190,000 AFY (years of normal rainfall) to 510,000 AFY (dry years) with population forecast in SCAG-78 and 78A.

Municipal and industrial water demand in the region would increase by 18.7% between 1980 and 2000 under SCAG-78. Agricultural water demand would likely be reduced about 0.3% - 0.4%, which is a slightly lower decline than would occur in SCAG-82A and 82B. Under SCAG-78A, municipal and industrial water demand would increase by 21.3% between 1980 and 2000, and agricultural water demand would be slightly less than for SCAG-78.

Mitigation Measures

Measures that could be adopted by public agencies and businesses to encourage a decrease in per capita consumption of water include: increased emphasis on water conservation, increased use of native or drought-resistant vegetation in landscaping, increased use of reclaimed wastewater, enforcement of conservation practices, and implementation of regulations requiring low-flow toilets and faucet flow restrictors. Depending on the extent to which these measures are adopted and enforced, the potential decrease in consumption could reduce water demand enough to allow water planners greater flexibility to respond to shortages that could occur if the Peripheral Canal is not built. Other measures contained in the Areawide Waste Treatment Management Plan include: maintaining existing stormwater conservation programs and developing long-range plans and implementation strategies to increase wastewater reuse through the Orange and Los Angeles Counties Water Reuse Study.

9. Wastewater Systems

Impacts of SCAG-82A and 82B

An analysis of projected wastewater flows resulting from each forecast alternative indicates that there would be major treatment plant capacity shortfalls by the year 2000, based on current and committed plant capacities. The SCAG-82B forecast would have the greatest regional impact, creating a 108.4 MGD (million gallons per day), or

7.1%, regional shortfall in treatment capacity. Draft SCAG-82A would have a slightly lower regional impact, with a capacity deficit of 98.6 MGD, or 6.5%.

Recent cutbacks in federal funding for sewage treatment and collection facilities could severely affect the ability of wastewater treatment agencies in the region to build and expand facilities to accommodate growth. As a result, insufficiencies in wastewater treatment capacity could seriously affect the region's ability to accommodate the growth levels forecast in SCAG-82A and 82B.

Impacts of SCAG-78 and 78A

Under SCAG-78, there would be a significantly lower impact on regional wastewater treatment capacity than under SCAG-82A and 82B, with a small--13.8 MGD, or 0.9%--regional surplus occurring. However, this would be due to a localized surplus in capacity in Los Angeles County. All other counties would experience shortfalls in needed capacity to serve forecast growth. For SCAG-78A, a regional deficiency of 6.0 MGD (0.4%) in wastewater treatment capacity would exist in the year 2000.

Mitigation Measures

Alternative measures which can be taken in areas where planned capacity would be lower than the flows forecast in SCAG-82A and 82B include:

- Accelerating the planning and construction of committed facilities;
- Constructing additional treatment facilities;
- Establishing moratoria to limit growth to currently planned facility capacity;
- Improving use, management and control of individual wastewater treatment systems;
- Amending the Areawide Waste Treatment Management (208) Plan for the South Coast Planning Area to reflect the adopted SCAG-82 growth forecast, so that wastewater management agencies may effectively plan capacities around projected flows based on the new growth forecast.

Most important, additional funding sources and mechanisms need to be secured for undertaking the treatment plant expansions necessary to accommodate growth.

10. Waste Disposal Systems

Impacts of SCAG-82A and 82B

The ability to process and safely dispose of currently generated solid and hazardous wastes in sanitary landfills could nearly reach

capacity during the timeframe of the two growth forecasts even without additional growth. The increased waste generation induced by the SCAG-82 alternatives will simply exacerbate an already critical problem. By the year 2000 about 36 million tons per year of solid waste (14 million tons over the 1980 level) and about 910,000 tons per year of hazardous waste (190,000 tons over the 1980 level) would be generated. Assuming no major increases in existing landfill capacity, or changes away from reliance on disposal, combined regional solid waste landfill capacity would be saturated by 1994. Hazardous waste landfill capacity in the region also would be saturated by 1994. It should be noted that if the 1980 disposal rate at the single existing hazardous waste landfill were maintained, capacity there would not be reached until 2008. In addition, yearly sludge generation would increase by about 650,000 to 660,000 tons to almost 1.2 million tons.

These increases in waste generation would result in requirements for new facilities or expansion of existing facilities, increased transportation requirements, potential increases in illegal dumping or storage, increased economic costs of disposal, and increased public anxiety and opposition to the siting of additional handling, treatment, and disposal facilities.

Impacts of SCAG-78 and 78A

The impacts of SCAG-78 and SCAG-78A would be similar to those of the SCAG-82 alternatives, except that slightly lower levels of wastes would be generated. For both of the SCAG-78 alternatives, about 32 to 33 million tons per year of solid waste (11 million tons over the 1980 level) and about 810,000 tons per year of hazardous waste (90,000 tons over the 1980 level) would be generated by the year 2000. Solid waste landfill capacity would be saturated by 1995, and hazardous waste landfill capacity by 1994. If the 1980 disposal rate at the single existing hazardous waste landfill were maintained, capacity there would not be reached until 2008. In addition, yearly sludge generation would increase by about 570,000 to 580,000 tons to about 1.1 million tons.

Mitigation Measures

Mitigation measures include:

- Reducing the total quantity of wastes requiring disposal by lowering production, recycling waste materials, and using waste materials as an energy source (resource recovery);

- Providing additional landfill disposal capacity;

- Developing and encouraging application of waste treatment methods and systems other than landfill disposal. This is a measure currently being aggressively pursued. The State of California, by Executive Order, has mandated a phase-out of landfill disposal of highly toxic wastes and is encouraging construction of advanced waste treatment facilities for recycling, destruction, and on-site

treatment of such wastes. This could potentially reduce hazardous waste disposal needs by 75% and extend the lifespan of existing landfill capacity considerably beyond the years indicated; and

- Providing more effective monitoring of waste production and strict enforcement of waste handling, transportation, and disposal regulations.

11. Energy

a. Electricity and Natural Gas

Impacts of SCAG-82A and 82B

Despite a population increase of 29%, electrical energy consumption is projected to increase by about 45% for both alternatives, based on California Energy Commission estimates of energy usage factors by major sectors.[3] This increase is attributable to several factors:

1. Residential consumption increase of 45%, caused by a 35% increase in number of households, and an 8% increase in consumption per household resulting from increased use of electrical appliances in homes and of electrical space heating in multi-family buildings;

2. Commercial consumption increase of only 27%, despite a 45% increase in commercial sector employment, because of great potential for conservation, especially in lighting and air conditioning.

3. Industrial consumption increase of 63%, reflecting a 30% increase in industrial sector employment and a 25% increase in per capita employee consumption, due to a steadily increasing substitution of mechanical labor.

Projections also show only an increase of 7% in overall natural gas consumption for both SCAG-82 alternatives. This increase is attributable to significantly higher (34%) manufacturing industry consumption. Residential and commercial gas consumption would decline by 11% and 5% respectively, because of conservation-oriented building practices, conservation in existing homes and businesses, and increased appliance and equipment efficiencies.

While year 2000 electricity supply cannot be analyzed, an analysis for 1992 suggests that adequate supplies will be available, assuming that conservation continues and that currently planned projects are completed. Conservation in the commercial and residential sectors, which consume more electricity than remaining activities, is especially important. New supplies should be available to accommodate additional growth as well as to allow utilities to reduce their dependence upon

---

[3]It can be expected that electrical consumption under SCAG-82A would be somewhat higher than under 82B due to subregional development pattern differences which the overall regional analysis could not consider. The full EIR discusses subregional differences.

oil and gas, the availability of which are subject to international events. This electricity would be produced from a mix of conventional power plants and from renewable/alternative generation facilities.

Adequate supplies of natural gas will be available to meet year 2000 demand, assuming that conservation efforts increase and that several projects currently being planned are finalized. Reduced consumption is particularly important in the residential and industrial sectors, where gas is used widely. The loss of a major source, such as liquified natural gas which is expected to provide about 20% of future supply, would hamper the ability of the utilities to meet demand. Future sources of natural gas will remain largely domestic, although the costs of the new sources will be dramatically higher than current costs.

Impacts of SCAG-78 and 78A

The SCAG-78 alternatives would result in overall increases of 25% to 31% for electricity consumption and declines in gas consumption of approximately 4 to 7%. Therefore, these alternatives would result in less energy demand than the SCAG-82 alternatives. Since adequate supply should exist for the higher alternatives, electricity and natural gas demand would be met for SCAG-78 growth assuming that conservation continues and major projects being developed are finalized.

Mitigation Measures

Additional energy conservation and other mitigation measures can greatly reduce energy consumption in the year 2000. The energy consumption projections for the year 2000 include significant energy savings resulting from programs which are currently being implemented. There remains, however, considerable potential for further energy conservation. It is estimated that additional measures could reduce year 2000 electrical energy consumption over 20% and total natural gas consumption by over 15% below the projected consumption levels.

Additional savings which cannot be quantified could be realized by:

- Attracting less energy-intensive industries;
- Promoting practices such as cogeneration to reduce energy use in manufacturing and industry;
- Adopting energy reduction measures in the Air Quality Management Plan;
- Discouraging switching to electrical space heating in multi-family residences.

b. Transportation

Impacts of SCAG-82A and 82B

Total annual motor vehicle fuel consumption would decline substantially under both alternatives, despite large increases in vehicle miles travelled by the year 2000 under both forecasts. These changes would be due to the expected increase in the average fuel efficiency of automobiles, as based on existing federal fuel efficiency regulations. (The average fuel economy of light duty vehicles in this analysis is about 24 miles per gallon in the year 2000, assuming that today's congestion would double).

Annual fuel consumption under 82A would decline 1,297 million gallons (21.3%) by the year 2000 from a 1979 level of 6,096 million gallons. For 82B, total consumption would decline 1,299 million gallons.

Fuel consumption for 82B could be even less than indicated in this analysis since the land use patterns in 82B would be particularly adaptable to increased transit use and walking.

As a result of the changes projected for vehicle fuel consumption in the SCAG region, demand for refinery output will decrease appreciably, and the fuel distribution system may stabilize or continue in its current decline. In the absence of major worldwide disruptions in oil supply, possible vehicle fuel shortages would not be likely.

Impacts of SCAG-78 and 78A

The impacts of SCAG-78 and 78A on vehicle fuel consumption and supply would be similar to those of the SCAG-82 alternatives except that fuel consumption would actually decline even more. Total fuel consumption would decline from 1979 levels by about 1,543 million gallons (25.3%) per year for SCAG-78 and slightly less for SCAG-78A.

Mitigation Measures

Possible methods to reduce vehicle fuel consumption still further, and to provide oil reserves in case of disruptions in the supply of imported oil include: measures to encourage greater fuel-economy of passenger vehicles, to reduce the need to travel, and to encourage use of more fuel-economical modes of transportation, such as ridesharing and mass transit. These types of measures are discussed in detail in SCAG's Draft Regional Transportation Energy Analysis and in analysis by the California Engergy Commission. Based on these analyses, automobile fuel economy could rise to 43 mpg for gasoline and 50 mpg for diesel fuel by the year 2000 which would reduce regional fuel consumption by 30-35% relative to 1979.

12. Public Services and Facilities

Impacts of SCAG-82A and 82B

Both forecasts would require local governments to furnish significantly higher levels of public service (police and fire protection, schools, regional parks); provide additional infrastructure (sewers, water facilities, streets, etc.); and incur substantially increased capital and operating costs.

Table 1-2 summarizes additional levels of services needed for both growth distributions, based on current per capita standards. These levels are identical, but in actuality SCAG-82B could require higher levels of police and fire protection. For education, SCAG-82A would require more new school districts than 82B, whereas in 82B, existing school districts (many of which are overcrowded, particularly in the regional core) would need to absorb more growth than in 82A.

Both forecasts involve significant levels of growth to urbanized, urbanizing and mountain/desert subregions. This would require expansion and rehabilitation of existing in-place infrastructure systems in already urbanized areas, and new construction, extension or expansion of systems in urbanizing and mountain/desert subregions. The major challenge will not be so much with those local facilities that are linked directly with new development, because these are largely developer-financed. Rather, it will be associated with those community-wide or region-wide facilities shared by existing and new residents: highways, mass transit, water, sewer and flood control facilities, etc.

One important difference between the two forecasts is that Draft SCAG-82B distributes heavier growth to urbanized areas and less growth to urbanizing areas. To this extent, SCAG-82B could have more adverse impacts in terms of needs and costs because:

- many infrastructure systems in highly urbanized areas (e.g., highways) are overburdened or aging;
- costs of tearing up, rebuilding or expanding in-place infrastructure systems in urbanized areas are very expensive;
- less raw land is available for infrastructure expansion; and
- land costs are generally much higher in urbanized areas.

To the extent that there is sufficient existing excess infrastructure capacity in urbanized areas, the above conclusion may not hold true, in which case the differences between the two forecasts might not be as distinct.

In addition to potential cost differences, there are other potential differences in infrastructure impacts between the two growth distributions:

- Under SCAG-82B, the high levels of growth in urbanized areas would be concentrated more in the regional core and largest centers, rather than spread throughout all centers as in SCAG-82A. Thus, SCAG-82B would concentrate more infrastructure demands in relatively fewer jurisdictions, which has both positive and negative implications: These larger jurisdictions may (or may not) have more existing excess capacity to absorb growth. It also may be easier to target state and federal funds to fewer jurisdictions. On the other hand, higher service and facility demands (and tax burdens) would need to be borne by fewer jurisdictions.

- SCAG-82A would involve relatively more new development while 82B would involve relatively more infill, recycling and small-scale development. To this extent, SCAG-82A could generate more local infrastructure (streets and roads, sewer and water lines, neighborhood parks and local schools) that is developer-financed, while 82B could generate less, since local facilities associated with infill, recycling and small-scale development more often are paid for and provided by local government, and passed on to all community residents. These types of development are usually less amenable to exactions and dedications.

- Both forecasts distribute high levels of growth to urbanizing and mountain/desert subregions where new institutional mechanisms will likely be required to supply or extend services and facilities to new areas (special district formations, annexations, incorporations). These institutional requirements are likely to be higher in SCAG-82A because more growth is distributed to urbanizing areas than in SCAG-82B. Institutional capabilities are already in-place in urbanized subregions where more growth is distributed under 82B.

Apart from large capital costs and needs for infrastructure, local governments will be faced with substantially higher operating costs for public services. In fiscal year 1979-80, local governments and special districts spent $7.9 billion for eight public services, including police and fire protection, parks, public education, streets and roads, and water and sewer services. In 1980 dollars, SCAG-82A and 82B both would cost an additional $2.3 billion annually, based on current per capita operating expenditures.

The fiscal ability or inability of local governments to provide additional services and facilities will, in large part, determine the degree to which the region can grow. Given the serious fiscal problems facing local government today, it is not certain whether the

region will be able to accommodate the significant levels of growth indicated by 82A and 82B, or even a lower forecast, unless major fiscal changes are forthcoming, and/or priorities and standards are reset.

Impacts of SCAG-78 and 78A

These forecasts would require significant expansions of public service systems and facilities, although at a lower level than Draft SCAG-82A or 82B. Expansions particularly will be required in urbanizing areas of the region where the majority of growth would occur. Much less growth is forecast in the urbanized and mountain/desert areas of the region than under SCAG-82, thus affecting services and facilities less in these areas. Even in these lower forecasts, local governments will need to substantially increase their fiscal capabilities in order to provide additional services and facilities.

Mitigation Measures

Numerous measures will need to be considered by local governments in coping with increased public service/facility needs and costs associated with growth. These include:

1. Increasing the revenue-generating capacity of local governments through measures such as increased user fees, tax policy reforms, and increased state/federal aid;

2. Achieving better efficiency in the delivery of services; through measures such as better use of underutilized facilities, redefinition of service district boundaries to produce better efficiencies of scale, and use of new technologies.

3. Reassessing levels of service with a view toward redefining or lowering standards;

4. Reducing or eliminating non-essential services;

5. Promoting greater responsibility for non-governmental provision of certain services or facilities;

6. Better phasing of development according to availability of adequate services and facilities; and

7. Limiting growth in those areas where fiscal resources are insufficient to pay for additional services and facilities.

13. Employment

Impacts of SCAG-82A and 82B

Both SCAG-82A and 82B forecast significant increases in regional employment levels, and a long-term strengthening of the economy between 1980 and the year 2000 - creating beneficial impacts for the region.

Under both scenarios, total employment would rise 41% to 7.9 million jobs, an annual growth rate of more than 2.1%. Employment and economic benefits would be more evenly distributed over the region than at present, with Riverside, San Bernardino and Ventura counties capturing greater shares of regional employment. SCAG-82A favors Riverside and San Bernardino counties slightly more than SCAG-82B. Another difference between the two forecasts is that SCAG-82B would provide more concentration of new jobs in the regional core and large centers of Los Angeles and Orange counties. Under SCAG-82A, new jobs would be more evenly spread throughout all types of centers in these two counties.

Under both forecasts, the ratio of jobs to people would grow from .47 in 1980 to .53 in the year 2000, reflecting a more economically productive population. In addition, both forecasts reflect an improved balance between the location of jobs and housing, particularly in the "house-rich" areas of Riverside, San Bernardino and Ventura counties. Benefits deriving from improved job/housing balance include decreased vehicle travel, and decreased vehicle emissions and fuel consumption.

Impacts of SCAG-78 and 78A

Although these two forecasts would create positive impacts for the overall economy, the magnitude of impacts would be less than for the SCAG-82 forecasts. Under SCAG-78, total employment would rise 20% to 6.7 million jobs, and SCAG-78A would rise 28% to 7.1 million jobs. These increases represent annual growth rates of 1.0% and 1.4% respectively, which are well below the annual rate in SCAG-82, and also recent trends (3.4% annual increase during 1970-1980). Although much employment growth would occur in Riverside, San Bernardino and Ventura counties, the first two counties would capture smaller shares of regional employment, as compared to the SCAG-82 forecasts. The geographic distribution of total employment in SCAG-78A would be more similar to the distribution in SCAG-82.

Under SCAG-78 and 78A, the overall ratio of jobs to population in the year 2000 would be less than forecast for SCAG-82A and B. In addition, both forecasts reflect less balance between jobs and housing throughout the region.

Mitigation Measures

No specific measures are recommended since the generalized impacts on employment are considered positive, representing an improvement over existing conditions.

TABLE 1-2

SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS OF ALTERNATIVE GROWTH FORECAST POLICIES - YEAR 2000

IMPACT CATEGORY/FACTOR	EXISTING CONDITION 1979 or 1980	YEAR 2000 IMPACTS			
		SCAG-78	SCAG-78A	SCAG-82A	SCAG-82B
1. GEOLOGY					
Exposure to seismic rupture, groundshaking, and liquifaction hazards.	Seismic risk occurs throughout region, particularly near major fault areas.	General increase in exposure to hazard, especially in Coachella Valleys, Chino Basin, coastal Orange County, Oxnard Plain, Riverside-Corona area.		Similar to 78, 78A, but greater risks in Chino Basin, Riverside-Corona area, San Jacinto Valley, San Fernando Valley area.	Similar to 78,78A but greater risks in core area, due to higher densities.
Soil instability and flooding hazards.	Potential soil instability and flooding in all hilly and mountain areas. Flooding risk also occurs in river floodplain areas.	General increase in exposure to hazard, especially in southern Ventura County, southern and eastern Orange County, and Chino-San Bernardino Riverside area.		Similar to 78, 78A, but greater risk in Chino Basin San Bernardino-Riverside area, San Fernando Valley area.	Similar to 78, 78A but greater risks in core area.
2. WATER QUALITY					
Surface water and groundwater degradation due to increased municipal and industrial point discharges and non-point discharges (urban runoff, septic systems, waste disposal sites, irrigation flows).	Localized water quality problems.	Potential water quality impact, particularly in S. Ventura Co., Santa Ana River Basin, S. Orange Co., Coachella Valley		Similar to SCAG-78, 78A, but also in San Jacinto River Basin, Malibu Creek area, Antelope Valley, Mojave River, Upper Santa Clara River Basin area.	
				Substantially greater impacts in upper Santa Ana River Basin area.	Substantially greater impacts in Los Angeles Basin area.
Marine water quality degradation due to municipal and industrial discharges and polluted storm drain and stream runoff.	Localized water quality problems.	Potentially substantial impacts to Ventura and Orange County marine waters.		Similar to SCAG-78,78A but also for Los Angeles County marine waters.	
					Greater yet for Los Angeles County waters.

TABLE 1-2 (cont'd)

IMPACT CATEGORY/FACTOR	EXISTING CONDITION 1979 or 1980	YEAR 2000 IMPACTS			
		SCAG-78	SCAG-78A	SCAG-82A	SCAG-82B
3. AIR QUALITY					
Emissions of pollutants to the South Coast Air Basin, in tons/day:*					
a. Reactive Organic Gases	1,535 tons/day	1,029 tons/day	1,065 tons/day	1,126 tons/day	1,129 tons/day
b. Nitrogen Oxides	1,243 tons/day	922 tons/day	946 tons/day	987 tons/day	986 tons/day
c. Carbon Monoxide	7,650 tons/day	5,700 tons/day	Not Available	6,278 tons/day	6,311 tons/day
d. Sulfur Oxides	274 tons/day	268 tons/day	Not Available	291 tons/day	292 tons/day
e. Particulates	613 tons/day	639 tons/day	Not Available	708 tons/day	710 tons/day
4. BIOLOGY					
Adverse impacts of marine water pollution on marine biota.	Localized areas of pollutant damage.	The impacts of the growth forecast alternatives would be roughly proportional to the projected population increases relative to the existing population, except for SCAG-82B where the impacts would be greater along the Los Angeles County coastal areas.			
Loss of habitat and biota due to coastal development and recreation.	Much of coastal habitat already degraded, especially wetlands.	These impacts would be roughly proportional to projected population increases, except for SCAG-82B where greater impacts would occur along Los Angeles County coast.			
Destruction or degradation of terrestrial habitats by development.	Existing urban and agricultural areas have been degraded; many habitats remain in non-urban areas.	250,000 added urban acres, including undetermined amount of natural habitat.	255,000 added urban acres, including undetermined amount of natural habitat.	364,000 added urban acres, including undetermined amount of natural habitat.	337,000 added urban acres, including undetermined amount of natural habitat.

*Emission levels necessary to attain air quality standards are as follows, as identified in the 1797 AQMP:

Reactive Organic Gases - 383 tons/day
Nitrogen Oxides - 800 tons/day
Carbon Monoxide - 2,480 tons/day
Sulfur Oxides - 554 tons/day
Particulates - 242 tons/day, excluding natural background levels

TABLE 1-2 (cont'd)

IMPACT CATEGORY/FACTOR	EXISTING CONDITION 1979 or 1980	YEAR 2000 IMPACTS			
		SCAG-78	SCAG-78A	SCAG-82A	SCAG-82B
BIOLOGY (cont'd)					
Destruction or degradation of mountain and desert habitats due to increased recreation.	Significant impacts have occurred in many areas.	These impacts would be proportional to overall population increases.		Impacts heavier than proportional in mountain and desert areas.	Impacts would be proportional to population increases.
Threat to rare and endangered species and significant ecological areas.	Past disturbance has caused rare and endangered status of species and made many habitats rare.	All alternatives represent severe threats, roughly proportional to population increases. Severe threat to California Condor and Coachella Fringe-Toed Lizard.		Severe threat to Stephens' Kangaroo Rat from SCAG-82 alternatives.	
5. LAND USE AND CULTURAL RESOURCES					
Added urban land (acres); percent increase in parentheses.	1,217,500 urban acres	250,000 acres added (20.5%)	255,000 acres added (20.9%)	364,000 acres added (29.9%)	337,000 acres added (27.6%)
Urban land recycled to higher intensity use (acres)	--	16,000*	16,300*	11,400	14,100
Net loss of agricultural land (acres).	1,131,000 agricultural acres	Not Available	Not Available	16,000 acres converted.**	13,000 acres converted.**
6. HOUSING					
Increase in total net housing units.	4,431,200	+1,060,200	+1,132,200	+1,513,900	+1,513,900
Increase in residential land acreage.	680,097	Not Available	Not Available	240,512	221,039
Demolition of existing housing stock for recycling to higher residential densities (number of housing units removed).	--	79,849*	Not Available	57,500	72,000
Displacement of low income households.	--	47,900	47,900	34,500	43,200
Adequacy of housing supply to accommodate population.	Current supply shortfall.	Unknown	Unknown	Unknown	Unknown

*A more detailed and precise methodology was used to calculate urban land recycled and demolitions in SCAG-82 than was used with SCAG-78; therefore results are not directly comparable. The SCAG-78 methodology significantly overstates the amount of land recycling and demolitions occurring; however, it was not practical to re-compute the SCAG-78 numbers.

**The forecasts of future agricultural land are based upon a policy of promoting preservation of existing agricultural land. Therefore, future urbanization within an RSA was allocated to vacant land until it was exhausted before assigning any remaining new development to agricultural lands. Another scenario is that such a policy will not be entirely effective and more farmland, therefore, would be converted than shown in the forecasts.

TABLE 1-2 (cont'd)

IMPACT CATEGORY/FACTOR	EXISTING CONDITION 1979 or 1980	YEAR 2000 IMPACTS			
		SCAG-78	SCAG-78A	SCAG-82A	SCAG-82B
7. TRANSPORTATION*					
Added person trips/day (percent)	36,751,000	+30%	+32%	+37%	+37%
Added transit trips/day (percent)	1,144,000	+41%	Not Available	+40%	+51%
Added vehicle miles of travel/day (percent)	193,789,000	+29%	+30%	+36%	+36%
Percent of transportation system with congestion during peak periods.	27%**	39%**	40%**	45%**	50%**
Average speed on highway network (pm peak period; miles/hour)	23 m/h (estimated)	16.0 m/h	Not Available	15.7 m/h	14.5 m/h
8. WATER SUPPLY					
Change in urban water demand (in thousand acre-feet/year; percent increase in parentheses).	2,749 (estimated)	+513 (19%)	+585 (21%)	+842 (31%)	+830 (30%)
Change in agricultural water demand (in thousand acre-feet/year; percent increase in parentheses).	3,985 (estimated)	Not Available	Not Available	-17.8 (-0.5%)	-13.9 (-0.4%)
Total water demand (percent increase in parentheses)	6,734 (estimated)	Not Available	Not Available	7,557 (+12%)	7,487 (+11%)
Impact on water supply for the SCAG region, assuming no Peripheral Canal.	Currently, there is a supply surplus.	Possibility of shortages in years of normal rainfall, probability of shortages in dry years.		Possibility of shortages in years of normal rainfall, probability of shortages in dry years.	
9. WASTEWATER SYSTEMS					
Added regional wastewater flows within service areas (MGD= million gallons per day)	1,271 MGD	+221 MGD	+241 MGD	+334 MGD	+343 MGD
Adequacy of existing/committed treatment capacity to serve forecast flows (MGD surplus or shortfall)	235 MGD Surplus	14 MGD Surplus	6 MGD Shortfall	99 MGD Shortfall	108 MGD Shortfall

*Data are for the urbanized area of the region.

**Congestion is a combination of "stop-and-go" and "full stop" traffic. These percents are based on a sample of 60 freeway and major highway locations in the region.

TABLE 1-2 (cont'd)

IMPACT CATEGORY/FACTOR	EXISTING CONDITION 1979 or 1980	YEAR 2000 IMPACTS			
		SCAG-78	SCAG-78A	SCAG-82A	SCAG-82B
10. WASTE DISPOSAL SYSTEMS					
Added waste generation (thousand tons/year) requiring disposal.					
o Solid Waste	21,625	+10,675	+11,448	+13,942	+13,986
o Hazardous Waste	720	+88	+88	+189	+189
o Wastewater Sludge	524	+571	+580	+648	+659
Year of saturation of existing regional landfill disposal capacity.					
o Solid Waste	1996*	1995	1995	1994	1994
o Hazardous Waste	1995/2008*	1994/2008	1994/2008	1994/2008	1994/2008
11. ENERGY SYSTEMS					
Increase in electrical energy consumption (%).	76,000 Gwh/year	+25%	+31%	+45%**	+45%**
Decrease or increase in natural gas consumption.	1,850 million cubic feet/day	-7.4%	-3.8%	+7.4%**	+7.4%**
Year 2000 change in transportation fuel consumption (in million gallons per year).***	6,096	-1,543 (-25.3%)	Not Available	-1,297 (-21.3%)	-1,299 (-21.3%)
Likely impact on transportation fuel availability.	Supplies are now readily available.	Negligible Impact	Negligible Impact	Negligible Impact	Negligible Impact

*Year of saturation, exclusive of additional population growth, but including estimated per-capita generation increases. The two different dates shown for hazardous waste relate to different assumptions regarding quantities of waste to be diverted to the one remaining Class I disposal site in the region since closure of three other sites. Technologies other than disposal (i.e., treatment, etc.) would extend lifespans of landfill capacity even further than indicated.

**It is likely that consumption under SCAG-82A would be somewhat more than under SCAG-82B due to subregional development pattern differences which the overall regional analysis could not consider.

***Despite significant increases in travel, annual fuel consumption is expected to decline under each growth forecast, due to improved fuel economy of vehicles.

TABLE 1-2 (cont'd)

IMPACT CATEGORY/FACTOR	EXISTING CONDITION 1979 or 1980	YEAR 2000 IMPACTS			
		SCAG-78	SCAG-78A	SCAG-82A	SCAG-82B
12. PUBLIC SERVICES AND FACILITIES					
Increased public service levels required:*					
o Police Protection (# of sworn officers.	22,600	+3,960	+4,475	+6,500	+6,500
o Fire Protection (# of fire-fighters)	12,285	+2,150	+2,430	+3,535	+3,535
o Schools; Grades K-12	3,050	+200	+230	+335	+335
o Regional Parks (acres)	75,886	+30,000	+34,430	+50,000	+50,000
Increased annual operating costs to local govts. for delivery of public services.** (billions of 1980 dollars)	$7.9 billion	+$1.4 billion	+$1.6 billion	+$2.3 billion	+$2.3 billion
Cost of additional infrastructure.	--	High	Higher	Significantly Higher	Significantly Higher
Availability of adequate revenues for funding public services and facilities.	Inadequate to barely adequate.	Uncertain	Uncertain	Uncertain	Uncertain
13. EMPLOYMENT					
Added regional employment.	5,591,800	+1,137,700	+1,557,200	+2,305,200	+2,305,700
Annual employment growth rate.	3.4% (1970-1980)	1.0%	1.4%	2.1%	2.1%
Improved employment-to-population ratio.	.47	.50	.51	.53	.53

*Based on existing per capita standards.
**Includes police, fire, schools, parks, streets and roads, flood control, water service, waste disposal and sewage.

E. CONCLUSIONS AND ISSUES

1. Degrees of environmental impact for the four forecasts considered are more sensitive to amounts of regional population growth than to the distribution of growth. Of the forecasts considered in the Draft EIR, SCAG-78 would have the least adverse environmental impact, 78A the second least impact, and the draft SCAG-82 forecasts the most adverse impacts.

2. Differences in the distribution of growth will result in some differences in impacts between SCAG-82A and 82B. In general, SCAG-82A would generate more adverse impacts in the urbanizing areas of the region, while 82B would generate more adverse impacts in the highly urbanized areas of the region.

3. There are a number of policies which are incorporated into or accompany both the SCAG-82 growth forecast alternatives which would minimize adverse environmental impacts or promote beneficial impacts, if successfully implemented. These include:

   - A better balancing of jobs with population within subregions;
   - More compact, concentrated growth within existing centers of the region;
   - Limited development of land with low suitability for development (land with very steep slopes and areas with special hazards).

4. The major positive impacts accompanying growth at all levels will be continued expansion in employment opportunities, and a strengthening of the regional economy.

5. Several factors could potentially constrain the amount of growth to be experienced in the region. These factors include potential shortages in housing production, high housing costs, inadequate water supply, wastewater treatment capacity shortfalls, fiscal limitations in providing infrastructure and public service expansion, poor air quality, and increased transportation congestion.

   The degree to which each of these factors could constrain growth varies and cannot be stated precisely. The preceding section identifies mitigating measures which could reduce or eliminate constraints, if successfully implemented in the right measure.

6. There are many environmental problems already facing the region today; all growth forecasts considered would worsen these impacts to varying degrees, unless adequate mitigation measures can be implemented. Some impacts most likely will be unavoidable, even with the application

of mitigation measures. Mitigation is likely to fall significantly short of relieving impacts on air quality, housing, transportation, water supply (outcome uncertain), and on provision of some public services and facilities.

7. Where the mitigation is significantly inadequate, remaining options could include:

   - Develop technology not yet operational or conceived;
   - Change behavior (e.g. greatly increase use of computers and telecommunications at home and work, and adopt emergency conservation measures as during the drought in the late 1970's);
   - Develop new processes and institutions for solving problems which presently appear insoluble;
   - Limit growth in the region or subregions through government incentives and disincentives;
   - Accept not meeting standards; and
   - Redefine or lower standards (e.g., for public services, mobility, shelter, etc.).

SCAG EXECUTIVE COMMITTEE

Representatives:

Mike Antonovich, Supervisor,
County of Los Angeles

Thomas Bradley, Mayor,
City of Los Angeles

Patricia Burk, Mayor,
City of Imperial

Kay Ceniceros, Supervisor,
County of Riverside

Eleanor Cohen, Mayor,
City of Claremont

Louis Curiel, Supervisor,
County of Imperial

Deane Dana, Supervisor,
County of Los Angeles

James Dougherty, Supervisor,
County of Ventura

Robert Farrell, Councilman,
City of Los Angeles

Donald Holt, Mayor,
City of Placentia

Frank McDevitt, Mayor Pro Tem
City of Ojai

John Melton, Mayor,
City of Santa Paula

Jon Mikels, Councilman,
City of Rancho Cucamonga

Bruce Nestande, Supervisor,
County of Orange

Pat Russell, Councilwoman,
City of Los Angeles

Chester Shearer, Mayor,
City of West Covina

Robert Townsend, Supervisor,
County of San Bernardino

Henry Wedaa, Councilman,
City of Yorba Linda

James Wilson, Councilman,
City of Long Beach

Regena Zokosky, Councilwoman,
City of Indio

Alternates:

Hal Bernson, Councilman,
City of Los Angeles

Derald Chisum, Mayor,
City of Ojai

Dave Cunningham, Councilman,
City of Los Angeles

Norman Eckenrode, Mayor Pro Tem,
City of Placentia

Edmund Edelman, Supervisor,
City of Los Angeles

Naomi Feagan, Councilwoman,
City of Norco

John Ferraro, Councilman,
City of Los Angeles

Don Fox, Mayor,
City of Brea

Loretta Glickman, Vice Mayor,
City of Pasadena

Kenneth Hahn, Supervisor,
County of Los Angeles

Edwin Jones, Supervisor,
County of Ventura

John Kennerson, Supervisor,
County of Imperial

Robert Older, Supervisor,
County of San Bernardino

Peggy Sartor, Councilwoman,
City of Victorville

Madge Schaeffer, Councilwoman,
City of Thousand Oaks

Herb Tice, Mayor Pro Tem,
City of West Covina

Harriett Wieder, Supervisor,
County of Orange

Marc Wilder, Vice Mayor,
City of Long Beach

Norton Younglove, Supervisor,
County of Riverside

U.C. BERKELEY LIBRARIES
C124896936

STAFF ACKNOWLEDGEMENTS

Management:

Mark Pisano - Executive Director

Frank Hotchkiss - Director of
Comprehensive Planning

Richard Spicer - Assistant Director,
Data Management, Forecasting
and Analysis

Environmental Analysis Staff:

Joanne Freilich - Program Manager,
Environmental Analysis

Gail Jensen - Environmental
Analyst

Gary Meunier - Environmental
Analyst

With the Assistance of:

Helen Clement - Regional Planner (Energy)

Cheryl Durand - Regional Planner (Employment)

Paul Hatanaka - Program Manager, Environmental
Planning

Keith Julian - Consultant (Waste Disposal,
Land Use, Employment)

Neil Lansing - Regional Planner (Energy)

Dave MacDonald - Transportation Planner
(Transportation)

Clint Rosemond - Regional Planner (Housing)

Cathy Tyrrell - Program Manager, Energy

Dennis Wambem - Program Manager, Economic
Development

Dennis Macheski - Program Manager, Development
Guide

Marianne Yamaguchi - Regional Planner (Wastewater)

Mildred Yamada - Regional Planner (Air Quality)